# THE

# AMERICAN

# MATHEMATICAL MONTHLY.

## BIOGRAPHY.

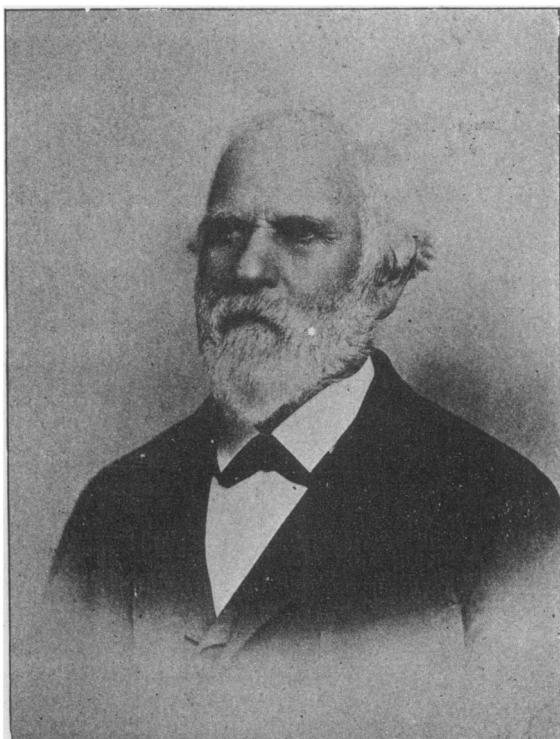### DR. JOEL E. HENDRICKS, A. M.

#### BY J. M. COLAW.

Joel E. Hendricks was born in Bucks county, Pennsylvania, March 10, 1818, and died at his home in Des Moines, Iowa, June 8, 1893.

In 1824, his father moved his family to Columbiana county, Ohio, where the subject of this sketch worked with his father and brothers on a farm until the fall of 1836. Up to this time he had only attended school at intervals, but had learned to read and write and was considered an expert in arithmetic. At the age of eighteen he taught his first school, and the next year (1837), with his father's consent, he bound himself as apprentice to a mill-wright for two years, with the condition that he need not work at his trade during the winter. In 1837-8, he again taught school, and by some means came into possession of a copy of John Hamilton Moore's Navigation and a copy of Ostrander's Astronomy. He soon became deeply interested in these books and devoted all his spare time to their study, with the result that he soon became quite expert in Trigonometry and learned to calculate and project both solar and lunar eclipses with considerable facility.

Young Hendricks spent the winter of 1838-9, working at his trade, in St. Charles county, Missouri, but returned to Ohio the following summer, and again taught school during the winter of 1839-40. During this winter he procured a copy of Bridge's Algebra, upon which he spent two hours each night, solving all the examples the book contained in five weeks.

In the spring of 1840, he visited Abijah McLean, the county surveyor, and a mathematician of good repute, and formed an acquaintance which afterwards ripened into a close friendship. To this friend, he owed much for his mathematical knowledge afterward acquired. From McLean's library he obtained most of the mathematical books which he afterward studied, including Hutton's Mathematics, Newton's Principia, and Bowditch's translation of the Mecanique Celeste.

Dr. Joel E. Hendricks, A. M.

In this same year, he entered a medical office with the view of reading medicine, preparatory to attending a medical school. He soon became deeply interested in his professional studies, and continued his course of reading, supporting himself by teaching in the winter. In the spring of 1842, he went to western Ohio, intending to practice medicine for a time to accumulate funds to enable him to graduate as an M. D. This expectation was never realized. In the spring of 1843, he married and the increasing demands on his time and means prevented him from afterwards attending a medical college. However, he continued the practice of his profession for twenty years with a fair degree of success.

Dr. Hendricks never aspired to political honors but during the latter part of the time he was engaged in the practice of medicine, and after he had abandoned his practice, he was intrusted with several offices, including that of school examiner, county surveyor, county treasurer, county auditor, U. S. deputy surveyor of Colorado, and deputy provost marshal for DeKalb county, Indiana, during the war.

A few years prior to 1860, he co-operated with several prominent citizens of Newville in the establishment of Newville Academy, and was elected teacher of mathematics, which position he resigned two years later. In 1861, he was awarded a contract by the surveyor general of Colorado, to make certain extensive surveys in Colorado, which, after many delays, difficulties, and dangers from the Indians, he completed October 28, 1861, two days before the time of his contract expired.

In the fall of 1864, he removed from DeKalb county, Indiana, to Des Moines, Iowa, where he afterward resided. During the first ten years after he removed to Des Moines, he was mainly engaged in surveying, and during the next ten years, viz.; from 1873 to 1883, he was exclusively engaged in editing and publishing *The Analyst*.

In 1865 he received an honorary A. M. from Indiana State University. In 1880 he was elected a member, and in 1885 a fellow of the American Association for the Advancement of Science and in 1891 he was elected a member of the New York Mathematical Society.

In the life of Dr. Hendricks, the practical and theoretical were happily blended. As a mathematician he was entirely self-taught. It was as editor of *The Analyst* that he obtained his prominence in the mathematical world. *The Analyst* was started in January, 1874, and was conducted with such marked ability, that its reputation became almost world-wide. Much of this deserved success was due to the untiring energy of its editor. Its discontinuance, after an existence of ten years, was not for want of support, but due to the failing health of Dr. Hendricks.

Last year, the State Historical Society of Iowa added to its collection of valuable papers a complete set of the *Analyst*, together with a biographical sketch of the editor, and many letters, which show the high estimation in which Dr. Hendricks was held by the mathematicians of his time. Prof. Pelz, of the Technical High School, of Graz, Austria, wrote to Dr. Hendricks for his portrait, and spoke most flatteringly of the ability displayed in conducting the *Analyst*. Prof. Glaisher, of Trinity College, England, expressed his high appreciation of

it. La Societe Physico-Mathematique, of the Imperial University of Kasan, and other scientific bodies, recognized the standing of the *Analyst* by soliciting an exchange of their publications. Mathematical specialists in Edinburg, Paris, and other centers of learning showered upon the editor of the *Analyst* evidences of their regard. From the colleges and universities of the United States came letters indicating the highest appreciation of Dr. Hendricks' services to science. The *Analyst* was deemed worthy a place in the observatory of Greenwich, En gland, and the famous astronomer, Schiaparelli, of the Milan observatory, wrote to Dr. Hendricks at length on mathematical subjects.

These references serve to show that the *Analyst* was regarded as a real promoter of mathematical progress and of genuine service to mathematicians. The life of a man capable of achieving such success, from so obscure a beginning and under circumstances so unfavorable, cannot fail to be of interest to the readers of the MONTHLY.

After the discontinuance of the *Analyst*, Dr. Hendricks continued to manifest his interest in mathematical subjects by frequent contributions to other periodicals, and his writing always commanded wide respect.

Though gifted beyond the ordinary, Dr. Hendricks was modest to a fault, and thought little of self or self interest. His life was characterized by candor, modesty, and devotion to the truth.

Dr. Hendricks had been in failing health for some time, but was not considered dangerously ill, until a few hours before his death. He passed away surrounded by his family, which consists of Mrs. Hendricks and six daughters.

# A DEFECTIVE PROOF IN SOLID GEOMETRY.

By C. W. M. BLACK, A. M., Professor of Mathematics in the Wilmington Conference Academy, Dover, Delaware.

On one occasion while engaged in an effort to render more evident to my class in Solid Geometry the text-book proof of a theorem which I had not before examined carefully, I became aware of its faulty character. Though the text-book* bears the date 1888, and is extensively used, the proof still remaines uncorrected and, so far as I have observed, unchallenged.

In proving "Two triangular pyramids having equivalent bases and equal altitudes are equivalent,"† we are told to divide the common altitude into a number of equal parts and pass planes through the points of division parallel to the bases, thus making the corresponding sections of the two pyramids equivalent. Then on the base and each section of one pyramid as lower bases, prisms are constructed with lateral edges equal and parallel to the division of

* Wentworth
† Book VII. Prop. XVI.